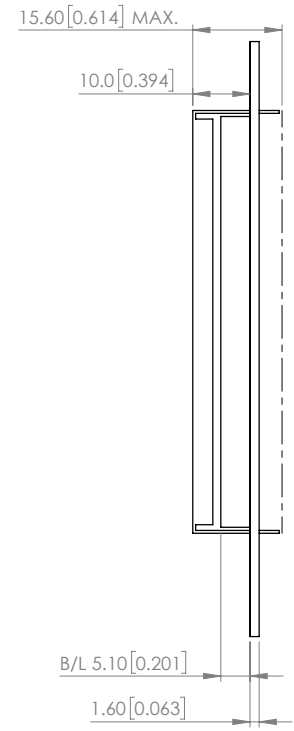
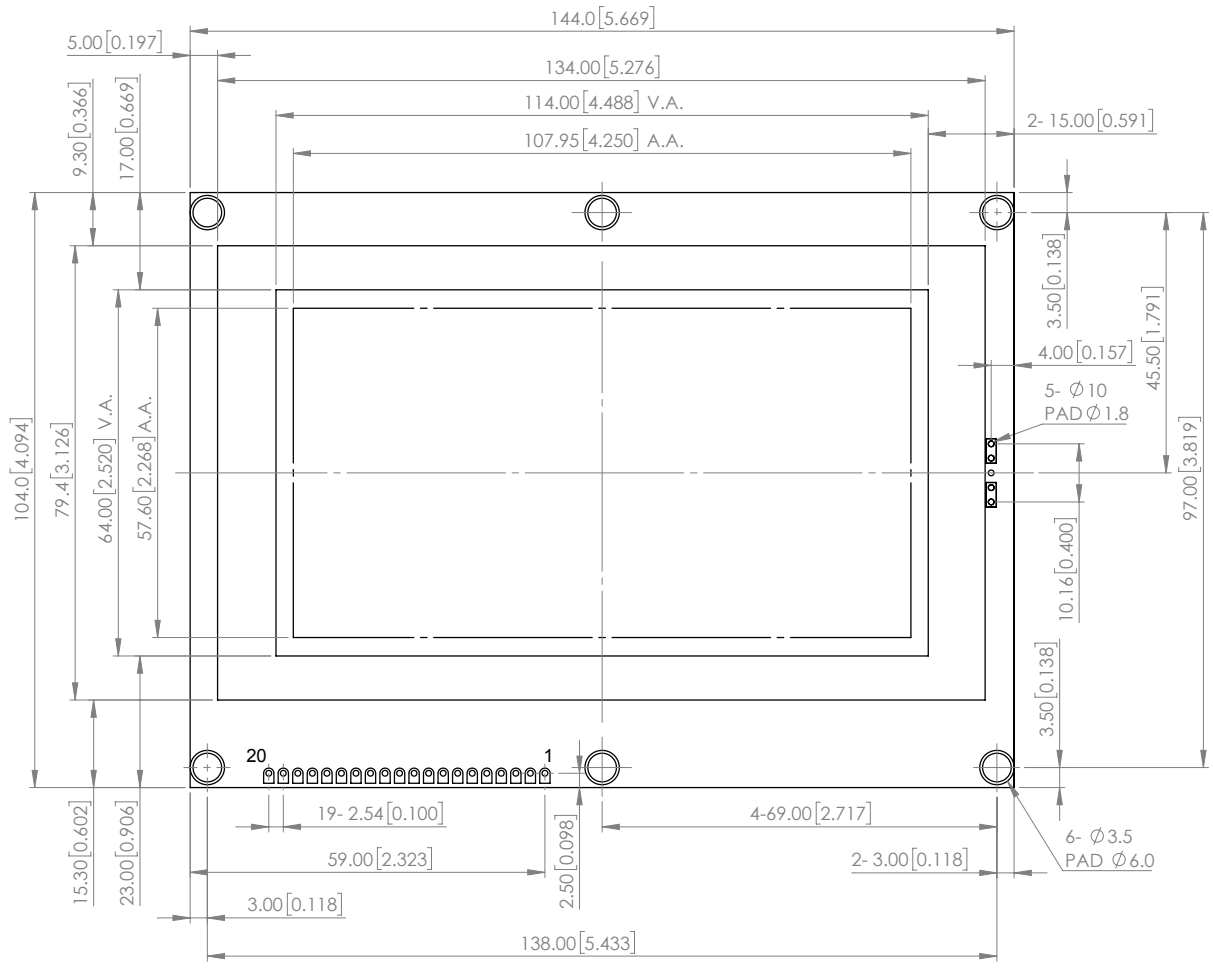
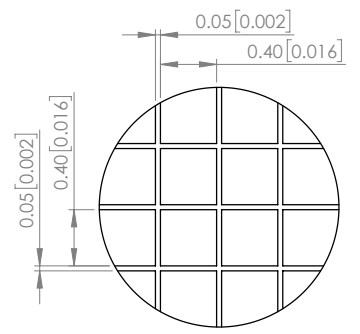


REV	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #10BRDR. & REDRAWN	09.10.98
B	E.C.N. #10516.	05.10.99
C	E.C.N. #10BRDR. & #10969	03.14.03
D	ECN-Lumex201800069	05.02.18



PIN NO	SIGNAL
1	VSS
2	VDD
3	VO
4	C/D
5	/RD
6	/WR
7	DB0
8	DB1
9	DB2
10	DB3
11	DB4
12	DB5
13	DB6
14	DB7
15	/CE
16	/RST
17	VEE
18	MD
19	FS
20	NC



NOTE:
1. RoHS COMPLIANT.

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144.0(W)×104.0(H)×10.8/15.6(D)MAX. mm, 240x128 DOT MATRIX GRAPHIC LCD MODULE, STN GRAY, POSITIVE, 1/128 DUTY, LED BACKLIGHT.

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PAGE : 1 OF 4	CHKD BY : E.C.
SCALE : NTF	APRVD BY : G.Y.
UNIT : mm [INCH]	

GENERAL SPECIFICATION

ITEM	DESCRIPTION
LCD TYPE	STN, POSITIVE
REAR POLARIZER	TRANSFLECTIVE
BACKLIGHT TYPE	LED
BACKLIGHT COLOR	YELLOW GREEN
TEMPERATURE RANGE	NORMAL TEMP., 5V
VIEWING DIRECTION	6 O'CLOCK
VIEWING AREA	114.0 (W)mm x 64.0 (H)mm
MODULE SIZE	144.0 (W)mm x 104.0 (H)mm x 15.6 MAX(D)mm
PIXELS SIZE	0.40 x 0.40
PIXELS PITCH	0.45 x 0.45
DISPLAY FORMAT	240(W) x 128(H)
DUTY RATIO	1 / 128 DUTY

ABSOLUTE MAXIMUM RATING

(1) Electrical Absolute Ratings

ITEM	SYMBOL	MIN.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	VDD-VSS	0	5.5	VOLT
POWER SUPPLY FOR LCD	VDD-Vout	0	22	VOLT
INPUT VOLTAGE	V1	VSS	VDD	VOLT
LED POWER DISSIPATION	PAD	-	7590	mW
LED FORWARD CURRENT	IAF	-	1650	mA
LED REVERSE VOLTAGE	VR	-	8	V

(2) Environmental Absolute Maximum Ratings

ITEM	WIDE TEMPERATURE			
	OPERATING		STORAGE	
	MIN.	MAX.	MIN.	MAX.
AMBIENT TEMPERATURE	0°C	+50°C	-20°C	+70°C
HUMIDITY (WITHOUT CONDENSATION)	NOTE 1, 2		NOTE 3, 4	

Note 1: Ta≤50°C: 80% RH max

Ta>50°C: Absolute humidity must be lower than the humidity of 85%RH at 50°C

Note 2: Background color changes slightly depending on ambient temperature.

This phenomenon is reversible.

Note 3: Ta at -20°C will be<48hrs at 70°Cwill be <120hrs when humidity is higher than 75%.

Note 4: Ta≤70°C: 75RH max

Ta>70°C: absolute humidity must be lower than the humidity of 75%RH at 70°C

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ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	VDD-VSS	-	4.5	5.0	5.5	VOLT
POWER SUPPLY FOR LCD	VEE-VSS	-	-14.2	-15.0	-15.9	VOLT
INPUT VOLTAGE	VIL	L LEVEL	0	-	0.8	VOLT
	VIH	H LEVEL	-2.2 VDD	-	VDD	VOLT
	VDD-VO	Ta=25°C	16.9	18.0	19.2	VOLT
POWER SUPPLY CURRENT FOR LCM	IDD	VDD=5.0V VDD-VO=18.0V	-	17.5	23.0	mA
	IOUT		-	5.0	-	
THE BRIGHTNESS OF BACKLIGHT	L	IF =1100mA	-	180	-	cd/m ²
PEAK EMISSION WAVELENGTH	λP	IF =1100mA	-	570	-	nm
LED FORWARD VOLTAGE	VF	If=1100mA	-	4.1	4.6	VOLT

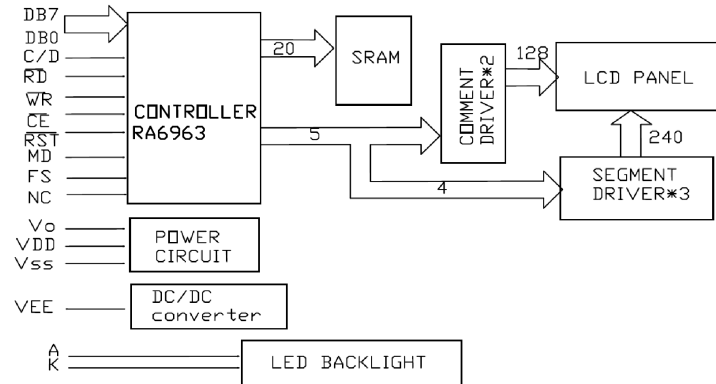
ELECTRICAL CHARACTERISTICS

PIN NO.	PIN OUT	FUNCTION DESCRIPTION
1	VSS	Power Supply Ground
2	VDD	Power Supply Voltage
3	Vo	Contrast Adjustment Voltage
4	C/D	WR='L', C/D='H': Command Write WR='L', C/D='L': Data Write RD='L', C/D='H': Status Read RD='L', C/D='L': Data Read
5	/RD	Data Read
6	/WR	Data Write
7	DB0	Data Bit 0
8	DB1	Data Bit 1
9	DB2	Data Bit 2
10	DB3	Data Bit 3
11	DB4	Data Bit 4
12	DB5	Data Bit 5
13	DB6	Data Bit 6
14	DB7	Data Bit 7
15	/CE	Enable Signal
16	/RST	Reset Signal
17	VEE	No Connection
18	MD	H : 32/L : 40 Select of Columns
19	FS	H : 6*8/L : 8*8 Select of Font
20	NC	No Connection

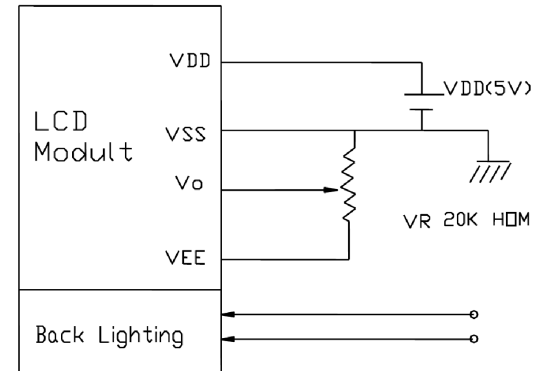
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		UNIT : mm [INCH]		

BLOCK DIAGRAM



POWER SUPPLY



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